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Basin Analysis and Petroleum System Characterization and Modeling, Interior Salt Basins, Central and Eastern Gulf of Mexico

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Disclaimer

Abstract

The principal research effort for Year 1 of Phase 2 (Concept Demonstration) of the project is Smackover petroleum system characterization and modeling. The necessary software applications have been acquired to accomplish this work. No major problems have been encountered to date, and the project is on schedule.

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Introduction

The University of Alabama and Louisiana State University have undertaken a cooperative 5-year, fundamental research project involving sedimentary basin analysis and petroleum system characterization and modeling of the North Louisiana Salt Basin and Mississippi Interior Salt Basin. According to the USGS, the hydrocarbon volume of these basins ranks them in the top 8% of the most petroliferous basins of the world.

Executive Summary

The principal research effort for Year 1 of Phase 2 (Concept Demonstration) of the project is Smackover petroleum system characterization and modeling. The necessary software applications are being acquired to accomplish this work. No major problems have been encountered to date, and the project is on schedule.

Project Objectives

The principal objectives of the project are to develop through basin analysis and modeling the concept that petroleum systems acting in a basin can be identified through basin modeling and to demonstrate that the information and analysis resulting from characterizing and modeling of these petroleum systems in the North Louisiana Salt Basin and the Mississippi Interior Salt Basin can be used in providing a more reliable and advanced approach for targeting stratigraphic traps and specific reservoir facies within a geologic system and in providing a refined assessment of undiscovered and underdeveloped reservoirs and associated oil and gas resources.

Experimental

Work Accomplished

Smackover Petroleum System–Work to characterize and model the Smackover petroleum system in the North Louisiana Salt Basin has been essentially completed. Petromod software applications have been acquired by the UA to accomplish the hydrocarbon migration pathway flow modeling. The migration modeling is near completion. Additional potential source rock samples acquired by LSU to support the source rock characterization work are being analyzed.

Other Mesozoic Petroleum Systems— The Bossier Shale has been identified as a possible source rock.

Technology Transfer— Technology transfer workshops reporting the results from Phase 1 of this project were conducted in Tuscaloosa, Alabama on February 20, 2007, and in Shreveport, Louisiana on March 27, 2007.

Work Planned

Smackover Petroleum System-Hydrocarbon migration modeling is planned for completion in May.

Other Mesozoic Petroleum Systems-Work to characterize and model the Bossier will continue.

Table 1
Milestone Chart—Year 4

	M	J	J	A	S	O	N	D	J	F	M	A
Smackover Petroleum System	xxx	xxx	xxx	xxx	xxx	xx	xxxx	xx	xxxx	xxx	xxx	
Mesozoic Petroleum Systems											xxx	

Work Planned
Work Accomplished xxx

Results and Discussion

The analysis of the source rock potential of the Bossier will require the study of seismic data from the North Louisiana Salt Basin. To accomplish this, Bennett Bearden, geophysicist at the University of Alabama, has been added to the project research team. He will begin this work in late April, and his study is expected to continue to the end of July.

We are in the process of preparing the annual report for this project. It will be submitted in May.

Conclusions

The project work is on schedule.

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